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**PUBLICATIONS OF THE
MANUFACTURING
ENGINEERING
LABORATORY
COVERING THE PERIOD
JANUARY 1989 -
SEPTEMBER 1991**

**Philip Nanzetta
Cheryl F. Hutchins
Linda L. Wood**

**U.S. DEPARTMENT OF COMMERCE
National Institute of Standards
and Technology
Manufacturing Engineering Laboratory
Gaithersburg, MD 20899**

**U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary
NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY
John W. Lyons, Director**

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November 1991



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INTRODUCTION

The mission of the Manufacturing Engineering Laboratory (MEL) is to bring the resources of the National Institute of Standards and Technology to bear on the standards and measurement problems associated with America's discrete parts manufacturing.

To fulfill this mission MEL conducts active programs of research in the areas of

- High precision dimensional measurement and precision engineering;
- Robotics and intelligent machines;
- Manufacturing data description, data administration, and information processing; and
- Sensors for manufacturing processes.

In addition, MEL provides technical support for joint industry committees which are developing voluntary standards for measurement techniques, and interfaces and maintains the national standards for length, force, and a number of subsidiary standards. It offers primary calibration services for these standards.

This list of publications reflects the diversity of scientific and technical problems which have been attacked over the past ten years in fulfillment of the Laboratory's mission. Publications listed in this document which do not relate to MEL's mission were written during the two years by members of the Laboratory while employed in other areas of NIST. These publications, like those related to the Laboratory's mission, reflect the wide background and knowledge base of members of the Laboratory.

The Bibliography listing is presented in alphabetical order, with each author's name appearing in bold print. All papers, articles, and books associated with an author are listed under the author's bold heading. The publications are in chronological order with the earliest publications appearing first.

This edition of the Publications of the Manufacturing Engineering Laboratory covers the period of January 1989 through September 1991. A previous publication Publications of the Center for Manufacturing Engineering, Covering the period January 1978 through December 1988 is also available.

The interested reader can obtain copies of publications from commercial publications sources such as the National Technical Information Service, university or reference libraries, or from the individual authors by writing to them in care of the Manufacturing Engineering Laboratory, Metrology Building, Room B322, Gaithersburg, MD 20899.

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